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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 481507GXL/jmw	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/NZ2003/000064	International Filing Date (day/month/year) 10 April 2003	Priority Date (day/month/year) 10 April 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ D06F 33/02, 37/00, 39/08; A47L 15/42; C02F 1/42; G01V 8/16		
Applicant FISHER & PAYKEL APPLIANCES LIMITED et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheet(s).

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 26 September 2003	Date of completion of the report 19 July 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer D.R. LUM Telephone No. (02) 6283 2544

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☒ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

See supplement sheet

Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.

1. Statement

Novelty (N)	Claims 2-5, 8, 9, 12-19, 26-36, 38	YES
	Claims 1, 6, 7, 10, 11, 20-25, 37, 39-42	NO
Inventive step (IS)	Claims	YES
	Claims 1-42	NO
Industrial applicability (IA)	Claims 1-42	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

NOVELTY Claims 1, 6, 7, 10, 11, 20-25, 37, 39-42

D1 EP 741991 B1 (WRAP S.p.A.) - Claims 1, 20-25

D2 EP 517205 B1 (AWECO KUNSTSTOFFTECHNIK GERAETEBAU GmbH & CO KG) Claims 1, 7, 10, 20-25

D3 DE 3209501 A (BOSCH-SIEMENS HAUSGERATE GmbH) - Claims 1, 7, 10

D4 DE 3544580 C1 (BOSCH-SIEMENS HAUSGERATE GmbH) -- Claims 1, 6

D5 FR 2580165 A (BOSCH-SIEMENS HAUSGERATE GmbH) - Claims 1,

D6 DE 2851541 A (LICENTIA PATENT-VERWALTUNGS GmbH) - Claims 1, 11, 20-25

D7 DE 4135820 A1 (BOSCH-SIEMENS HAUSGERATE GmbH) - Claims 1, 10, 11, 20-25

D8 EP 919178 A2 (T & P S.p.A.) - Claims 37, 39

D9 FR 2615617 A1 (ESSWEIN SA) - Claims 37, 39

D10 DE 2911366 A1 (LICENTIA PATENT-VERWALTUNGS GmbH) Claims 37, 39

For example, D1 discloses ion exchangers for dishwashers in which brine is pumped through the resin container to regenerate brine in accordance with a duty cycle selected which is set by the user and controlled by a microcomputer. See paragraphs to - re paragraphs 29-37

Float system G is used to control the water level and the salt absence indicator in the brine tank - re paragraph 79.

D2 also discloses a programmable supply of brine into the resin container for regeneration depending on the cycle, see claim 1

D2 discloses overflow weirs 10 and air breaks 6

Salt absence indicators using light sources are disclosed in D8 - D10, for example, D8 describes optical sensors 8, 8' and 9, 9' which are directed into the brine tank and which functions as checking devices to monitor the level of resin's height inside the container.

INVENTIVE STEP (IS) Claims 1- 42

D11 EP 855164 A1 (ESSWEIN)

D12 WO 01/26532 A1 (FISHER & PAYKEL LIMITED)

D13 FR2825176 A1 (CLOVIS)

D14 JP 09005021 A1(MITSUBISHI CABLE IND LTD)

Claims 1, 6, 7, 10, 11, 20-25, 37, 39-42 - as above.

Claims 2-5, 8-9, 12-19, 26-36, 38

Continued on Supplement page

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. At Page 6, there does not appear to be any continuity between lines 5 and 6.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of Box V

None of the above documents individually disclose all the features in these claims, however, when combined with the disclosure in other documents discloses the claimed invention. Because the citations are all from the same art, it is considered obvious to a skilled addressee to combine the disclosures.

For example:

- with respect of the added feature of incorporating a salt absence indicator using a light source to a water softener having a programmable duty cycle injection of brine for ion regeneration is considered not to involve any inventive step as it involves no ingenuity and will be obvious to a skilled addressee. (re claims 11, 16, 26-31 etc). This feature is disclosed in D8, D9, D10 D13, D14
- Also, the mounting of the water softener which include the features of independent claims 1, 20 or 33 in hollow walls of the washing appliances is also not considered to involve an inventive step. This feature is described in D4, D5.
- D3 discloses the feature of an overflow weir for the maintenance of the water level in the brine tank and including this to the documents which include the features of the independent claims is considered to lack an inventive step.
- Claims 18 and 33 define wash chambers which are slidably mounted in a cavity and which have top closures. These types of washers are disclosed in D12 and combining the disclosures of D4 and D5 with D12 is considered to be obvious to a person skilled in the art and hence lacks an inventive step.

Although none of the art cited in the International Search Report shows the usage of a two-way solenoid valve as a flow-directing valve from a single supply source, this is considered to be common general knowledge and hence lacks an inventive step. This is applicable to at least claims 2 -4, 21 - 23.

The features added by the remainder of the claims, such as, coupling an overflow weir spillage directly to an appliance drain or sump (claims 8, 9) , energising or the delay in energising of the indicator light when the absence of salt is detected (claims 14, 15, 17, 29, 30, 31, 32, 38) and dispensing the softened water through the soap dispenser (claims 5, 34) are also considered to be common general knowledge and is obvious to a skilled addressee.

As a consequence, the invention as defined in claims 1-42 lacks an inventive step

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of Box IV

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Preliminary Examination Authority has found that there are different inventions as follows:

1. Claims 1-10 are directed to a washing appliance and claims 20-25 are directed to a water softener, respectively, with the regeneration of the resins in accordance with a duty cycle selected in accordance with the supply water hardness comprising the first "special technical feature";
2. Claims 11-19 are directed to a washing appliance, claims 26-32 to a water softener, and claims 37-38, & 39 are directed to a salt absence indicator, with the salt absence indicator comprising the second "special technical feature"; and,
3. Claims 33-36 - a washing appliance comprising a water supply system as defined in claim 33, with the features of claim 33 comprising the third "special technical feature".

Since the abovementioned groups of claims do not share any of the technical features identified, a "technical relationship" between the inventions, as defined in PCT rule 13.2 does not exist.

It is noted that claims 1-19 & 20-32 include a common concept of the regeneration of the resins in accordance with a duty cycle selected in accordance with the supply water hardness as defined in claim 1 and/or 20. However this feature is not novel in the light of many documents of which the following is a selection:

1. DE 19960307 (BSH BOSCH & SIEMENS HAUSGERAETE GMBH)
2. DT 2851541 (LICENTIA PATENT GMBH)
3. EP 517205 (AWECO KUNST GERAETEBAU GMBH & CO KG)
4. EP 741991 (WRAP S.p.A)

Accordingly this common feature cannot constitute a special technical feature as defined in PCT Rule 13.2 since it does not make a contribution over the prior art listed above.

Claims 11 and 26 introduce the additional feature of the salt absence indicator. This is considered to constitute, prima facie, a "special technical feature" distinguishing the invention of these claims from that in claims 1 and 20.

Thus, the international application does not relate to one invention or to a single inventive concept, a posteriori.